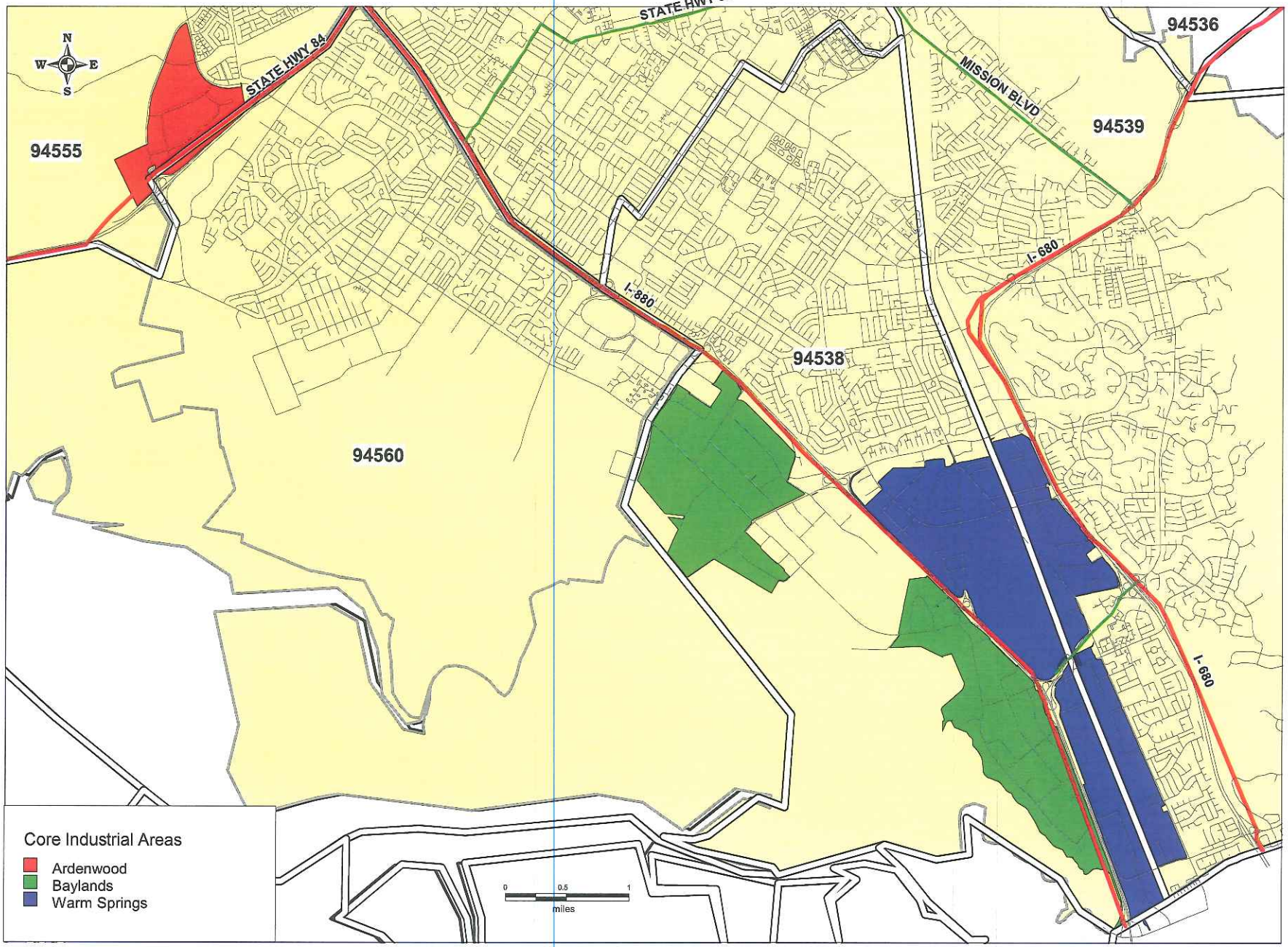
Figure 16:
Core Industrial Areas



are removed.[9] Because of the nature and size of Baylands and Warm Springs areas, these areas are divided into subareas, as shown in **Figure 17**. Parcel data characteristics for each area are described in **Table 33**.

Ardenwood

Located at the Highway 84/I-880 junction, Ardenwood is characterized by two- to four-story business parks with office, R&D, and manufacturing buildings. Since the 1990s, it has accommodated a large number of new businesses and developments and attracted many biotech and information technology firms. Ardenwood's prominent list of life science businesses includes Amgen, while companies such as Logitech comprise the information technology cluster. Ardenwood's other industries include professional and technical services. With over one million square feet of commercial space, Ardenwood Technology Park is one of the largest business parks in the City. Its tenants include Devry University, net.com, and Amgen. Ardenwood included about 5,500 driving industry jobs in 2007.

Ardenwood comprises approximately 350 acres, bounded by vacant land to the Northwest, with existing and planned residential development along its eastern border. Highway 84 divides the District from the City of Newark, where the former Sun Microsystems campus and additional business parks comprise a significant amount of office/R&D space. Although more than 1.1 million square feet of commercial space has already been developed by Peery Arrillaga and Sobrato Development Corporation to accommodate the growth of the 1990s, there is still a substantial amount of vacant land within the District.

The area's easy accessibility to the Peninsula, newer building inventory with 1997 as the median construction year, and availability of suitable space have historically appealed to many new businesses, the majority of which are in the biotech and computer and communications manufacturing clusters. Many tenants, driven by lower rents and flexibility of space, have relocated to Ardenwood from Silicon Valley and the Peninsula where workspace rents have been significantly higher.

Approximately 60 parcels comprising 350 acres are designated as the core industrial area within the district and are referenced in this analysis. With the average parcel size of 5.5 acres,[10] the area has the largest parcel size and the newest building inventory out of the other subareas.

Baylands

For the purposes of this analysis, Baylands is broken into three smaller subareas, North, Central and South. Central Baylands is excluded from the industrial capacity analysis as a significant portion of the area has already been converted to retail uses including the Pacific Commons retail

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[9] Total acreage represents the sum of the parcels within the industrial area's boundary from the City parcel database. Acreage was not available for a small number of parcels.

[10] Net acreage includes the specific area of parcels and excludes public rights-of-way, such as sidewalks and roads.

Figure 17:
Core Industrial Subareas

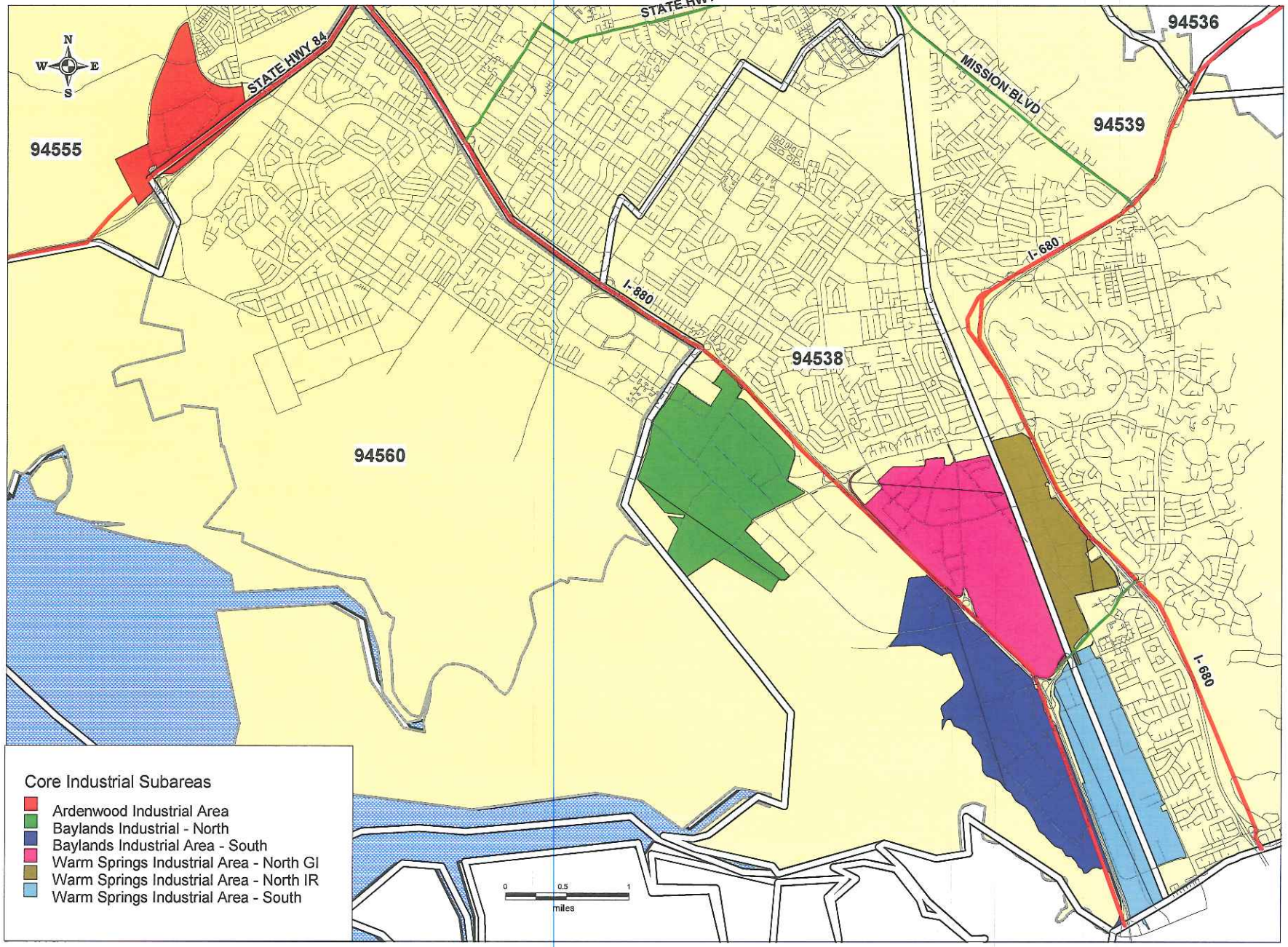

Table 33
Industrial Land: Overall and Vacant Parcels
South Fremont/Warm Springs Area Study; EPS#20050

Item	Ardenwood	Baylands		Warm Springs			Total/ Average
		North (1)	South	North GI (2)	North IR (3)	South	
Study Area Parcels							
Number	62	135	183	224	122	149	875
Total Acreage	345	785	632	696	462	550	3,470
Average Acreage	5.6	5.8	3.5	3.1	3.8	3.7	4.0
Median Year Built	1997	1992	1995	1980	1992	1984	1991
Vacant Parcels							
Number	28	39	67	66	52	40	292
Acres	**153**	**186**	**76**	**227**	**79**	**25**	**745**
% of Total Acreage	44%	7%	12%	33%	17%	5%	18%
Average Acreage	5.5	4.8	1.1	3.4	1.5	0.6	2.6

(1) Excludes 50 acres held by PG&E. Includes 133-acre CISCO Property (5 parcels) that had been part of the A's Ballpark proposal, which has since been withdrawn.
(2) Includes 161 acres by NUMMI.
(3) Includes 66 acres of vacant land comprised of 13 parcels that will include the future BART station.

Sources: City of Fremont; County Assessor; Economic & Planning Systems, Inc.

center and the Fremont Auto Mall. The combination of these uses will likely limit the potential for future industrial development and ultimately increase both the pressure and logic of the conversion of any remaining, contiguous vacant land to non-industrial uses.

Baylands Business District is accessible by I-880 and includes significant employment in a number of driving industries, including computer and communications manufacturing, distribution and logistics, biotech, and software and communications technology. Prominent employers include AsteelFlash, Lam Research Corporation and Boston Scientific Corporation. Employment in the driving industries was estimated at over 20,000 jobs in 2007.

The area's character is of a heavier industrial nature compared to Ardenwood, and has stronger economic ties to the I-80/880 Corridor as well as Silicon Valley. In particular, the northern part of Baylands around Stevenson Boulevard includes concrete manufacturers and other similarly heavy industrial operations. Areas along I-880 to the south tend to feature higher-end, single-story R&D/manufacturing buildings and office parks, the majority of which are relatively new. Baylands also includes highway-oriented retail centers along the northwest portion of Stevenson Boulevard. The majority of the district is located in a redevelopment area.

Baylands includes some of the largest business parks in Silicon Valley, such as Bayside Business Park and Bayside Technology Park. Pacific Commons, located on former industrial land, is also in the greater Baylands area and features large-format big box retail with tenants such as Costco and Kohl's. Despite ongoing changes, there are large undeveloped tracts of land still available in the north and south Baylands industrial areas. Amenities in Baylands include wider tree-lined streets and sidewalks. These amenities have historically appealed to heavier industrial uses, such as manufacturing and warehousing, though the mix of tenants has expanded to include semiconductor, biotech, engineering, logistics, and cleantech industries since the 1990s.

- **North Baylands.** The North Baylands subarea is located west of I-880 just north of Auto Mall Parkway. The area consists of approximately 135 parcels representing 785 acres, with an average parcel size of about 5.8 acres.[11] This inventory includes the 133-acre CISCO property which was previously encumbered in the A's Ballpark Project proposal, which has since been withdrawn. It is worth noting that an additional 50 acres of vacant land attributed to the PG&E site are excluded from this analysis since it is owned by the utility and likely to provide utility service to the region in the future. The median year of building construction is 1992. The subarea has been impacted by encroachments along Stevenson, Albrae, and Warm Springs Boulevard from retail and service uses.

- **South Baylands.** The South Baylands subarea is located along the west side of I-880 and south of Pacific Commons and east of Don Edwards National Wildlife Refuge. It consists of roughly 180 parcels accounting for 632 acres, with an average parcel size of about 3.5 acres. The median year of building construction is 1995. South Baylands has a newer building inventory and commands higher land values compared to North Baylands.

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[11] Parcel number and acreage estimates include 133 acres of CISCO property (5 parcels) that had been part of the A's Ballpark Proposal, which has since been withdrawn.

Warm Springs

For the purposes of this analysis, Warm Springs is broken into three subareas: North General Industrial, North Restricted Industrial, and South, shown in **Figure 18**. Warm Springs is located in southeastern Fremont, between I-880 and I-680. The north portion of the district (north of Mission Boulevard) has been dominated by the NUMMI plant, which has been recently purchased by Tesla. The remainder of the district consists of a mix of warehouse space along Warm Springs Boulevard. The area south of Mission consists of low-rise R&D and warehouse space, with pockets of vacant and underutilized land interspersed between a mix of older industrial businesses and a few newer businesses.

Warm Springs has the highest employment in the driving industry sectors at about 35,000 jobs. Tenants in Warm Springs include a number of technology companies engaged in software, hardware, telecommunications, semiconductors, biotech, and clean tech. Companies include Western Digital, Stats CHIP Pac Ltd Thermo, Seagate Technology, Wintec, and Solyndra. Warm Springs employs significant numbers in the computer/communications manufacturing, distribution and logistics, and software and communications clusters.

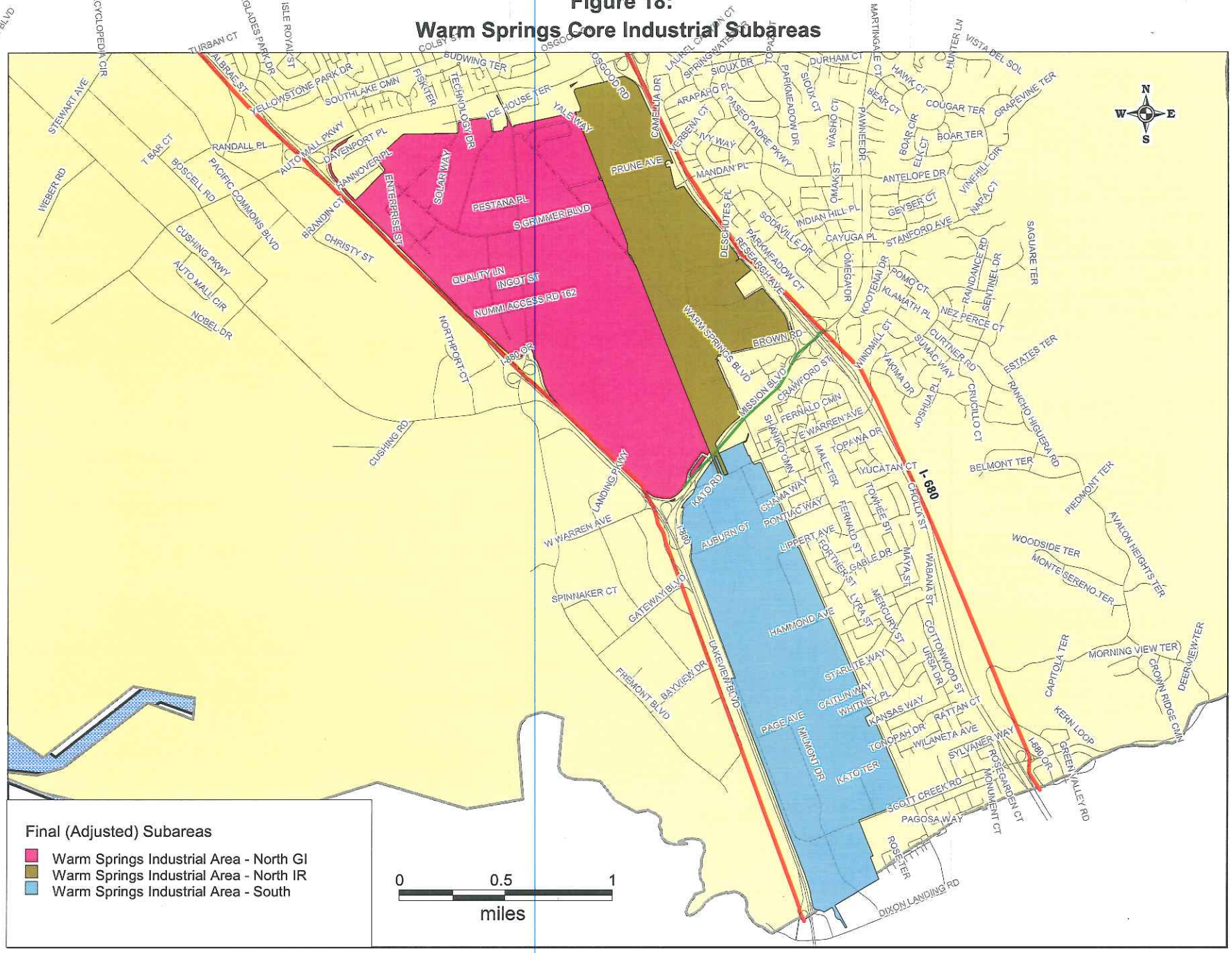
Warm Springs is also home to a growing retail cluster along Automall Parkway, with the list of tenants including REI, Home Depot, Fry's Electronics, and Wal-Mart. South of Mission Boulevard, Warm Springs is bounded by older residential neighborhoods on the east, with some new residential developments being permitted and built on the former industrial land at the southern end.

The majority of the Warm Springs district consists of space with a traditional industrial character. Warm Springs has an older building inventory with 1983 as the median year of construction, which has resulted in a number of buildings becoming obsolete. The area has had the most affordable rents relative to the other core industrial areas in the City.

- **North/General Industrial.** The Warm Springs North/General Industrial area is located directly east of I-880, west of the railroad tracks, and north of Mission Boulevard. Its 700 acres of land are made up by 224 parcels with an average parcel size of 3.1 acres. Of the 227 acres of vacant land, 161 acres are associated with Parcels 1 and 3 from the recent NUMMI closure. Parcel 2 includes the 5.5 million square foot NUMMI factory on 208 acres recently purchased and partially occupied by Tesla. The median year of building construction is 1980. The subarea has the smallest parcel sizes and the oldest building inventory out of the core industrial subareas in this analysis, although its underutilized average parcel size is the largest.

- **North/Restricted Industrial.** The Warm Springs North/Restricted Industrial area is located west of I-680, east of the railroad tracks, and north of Mission Boulevard. It has a total area of 462 acres and 122 parcels with an average parcel size of 3.8 acres. The median year of building construction is 1992. This area will be home to the new Warm Springs BART station, scheduled to open in 2014. The new station will be developed on six acres with an additional 60 acres planned to accommodate future BART-related development.

Figure 18:
Warm Springs Core Industrial Subareas



- **South Warm Springs**. South Warm Springs is located directly east of I-880 and west of Warm Springs Boulevard, and is bisected by the railroad tracks. Its total area of 550 acres consists of 150 parcels with an average size of 3.7 acres. The median construction year is 1984. South Warm Springs has seen a significant influx of uses not originally envisioned for an industrial area, including recreational, religious, and other activities.

Core Industrial Area Demand

The separation of the workspace demand is useful analytically, though in many cases mixes of uses will occur, such as office/R&D flex buildings or R&D/manufacturing buildings. At the same time, a portion of each of the space types will be in buildings with just one of these workspace types. The majority of R&D, manufacturing, and warehouse development will likely occur in the core industrial areas of the City, where existing industry clusters and infrastructure exist to support future growth.

Table 34 shows the conversion of the Citywide workspace demand into core industrial area workspace needs with the findings described below.

- **R&D**. Given the limited other locations for R&D development, approximately 95 percent or 2.4 million of R&D space is assumed to be captured within the core industrial areas. Applying a floor-area-ratio of 35 percent, this translates into nearly 160 acres of land needs.
- **Warehouse/Manufacturing**. All of 7.0 million square feet of the future warehouse and manufacturing growth is assumed to be captured within the core industrial areas. Applying a floor-area-ratio of 35 percent, these uses will require about 460 acres of land.
- **All Workspace**. Based on assumed capture rates of the core industrial areas and development densities, a total of 620 acres of land would be required to accommodate future employment and workspace growth in the core industrial areas in Fremont if no vacant building space were available and no redevelopment was to occur.

Vacant Space/Development Capacity

The development capacity assessment is based on parcel data available from the County Assessor, parcel-specific input from City staff, citywide brokerage reports, interviews with local industry professionals, tours of the industrial areas, and prior EPS analysis of industrial development capacity in other jurisdictions. This information is used to estimate industrial development capacity based on vacant land and redevelopable land estimates established in the Industrial Land Use Analysis for the City of Fremont General Plan (2008). As part of the analysis, the amount of available non-obsolete vacant building space that could accommodate new job growth and space demand is also included.

Vacant Building Space

A portion of the 9.4 million square feet of estimated building space demand over the next 25 years will be accommodated in core industrial areas through existing vacant space. While some of the vacant space is obsolete for some of the R&D and manufacturing functions of emerging technology companies, the majority of currently vacant space, likely over 75 percent of the existing vacant space, is not obsolete, representing about 4.9 million square feet of industrial space. Assuming an ongoing frictional vacancy rate of 5 percent of all industrial space,

Table 34
Projected Industrial Space and Equivalent Land Needs, 2010 - 2035
South Fremont/Warm Springs Area Study; EPS#20050

Item	R&D	Warehouse/Manufacturing	Total
Net New Space Needs: Fremont			
Building Square Feet	2,526,000	7,046,000	9,572,000
Net New Space Needs: Core Industrial Areas			
% in Study Areas	95%	100%	
Building Square Feet	2,399,700	7,046,000	9,445,700
FAR (1)	35.0%	35.0%	
Land Need (Acres)	157	462	620
% of Total	25%	75%	100%

(1) Based on FARs allowed under current General Plan in industrial areas.

Source: ABAG Projections 2009; Economic & Planning Systems, Inc.

representing about 1.8 million square feet, this leaves an inventory of non-obsolete vacant space of about 3.1 million square feet (8 to 9 percent of the space total) that could be expected to be filled by new demand over time.

Vacant Land

Vacant land represents the clearest indication of potential development capacity. Vacant parcels were identified as parcels with no or minimal existing improvement value from the City-adjusted parcel database. City staff also identified the PG&E vacant parcel not expected to be available for development in the foreseeable future (see **Table 35**). Developable vacant acreage is calculated by removing 10 percent of the parcel acreage, an estimate of undevelopable acreage associated with site size, configuration, or conditions. In total, the Ardenwood area includes about 140 acres of developable vacant industrial land, the Baylands area includes 235 acres, and Warm Springs include about 300 acres, of which about half are associated with former-NUMMI parcels 1 and 3.

Table 35: Vacant Industrial Land Capacity in Fremont

Item	Total Vacant Acres (1)	Developable Vacant Acres (2)
Ardenwood/Baylands		
Ardenwood	153	137
Baylands North	186	168
Baylands South	76	68
Subtotal	415	373
Warm Springs		
North - General Industrial	227	204
North - Restricted Industrial	79	71
South	25	22
Subtotal	331	297
Total	**745**	**671**

(1) See Table 34.
(2) About 10 percent of the potential capacity assumed not developable because of parcel configurations and sizes.

Sources: City of Fremont; County Assessor's Office; Economic & Planning Systems, Inc.

Redevelopment Capacity

Other capacity in addition to vacant land includes vacant and obsolete building capacity and underutilized land. The timing for redevelopment of this space is highly speculative and requires new development value sufficient to compensate existing owners for the value of their land and any ongoing building lease revenues. A detailed 2008 analysis of redevelopment capacity estimated minimal redevelopment capacity in Ardenwood with greater opportunities in Baylands .

Implications for Warm Springs Area

The overall demand for industrial space in the City of Fremont was estimated at 9.4 million square feet of building space, comprising about 2.4 million square feet of R&D space and 7.0 million square feet of manufacturing space and warehouse/distribution space. These estimates are based on ABAG's job forecast for the City of Fremont. About 3.1 million square feet of this demand could be accommodated in existing vacant building space, resulting in an overall net demand for 6.3 million square feet of new development. At typical industrial floor-area-ratios, this represents a demand for about 415 acres of industrial land (see **Table 36**).

The City has historically been able to capture significant levels of R&D, manufacturing, and warehouse development, in part because of its availability of large industrially zoned areas, vacant land, and in some cases large parcel sizes. Ardenwood has historically functioned as an area more directly tied to Silicon Valley, while Baylands and Warm Springs have links with both Silicon Valley and the I-80/880 Corridor and include a more diverse range of industrial uses, from heavier industry to R&D. The northern Warm Springs area to the west of the railways tracks also includes the major area with the most protected industrial land use designation, General Industrial.

In aggregate, the industrial land demand through 2035 of about 415 acres can be accommodated within the 671 acres of existing vacant industrial land across the three core industrial areas. From a land capacity perspective, this comparison suggests the potential to allow for some industrial conversions (recognizing that potential land use conflicts and other issues may limit the desirability of such conversions). As described in the previous section, Ardenwood and Baylands collectively provide about 373 acres of vacant industrial land. The vacant capacity in these areas alone is insufficient to meet the projected demand for industrial land through 2035. The re-designation of all or a significant portion of Warm Springs is likely to result in a constraint on industrial development in the City. The availability of industrial land in the Warm Springs area offers a broader range of alternatives to industrial developers/users, while also offering some small and large parcels for the expansion of existing industrial businesses and the attraction of new ones.

Future Office Development

This section considers the potential demand for office development (distinct from Office/R&D Flex or other office/industrial configurations) in the context of the potential locations in the City and draws baseline conclusions for the Warm Springs area.

Current Office Supply and Future Demand

The City's limited supply of tracked Class A and B office indicates a relatively low historical office development capture rate in the City of Fremont. This concentration is low relative to most other Bay Area job centers, such as Silicon Valley and Tri-Valley, though is consistent with many other central and southern I-80/880 Corridor cities.

The ABAG job forecasts suggest a potential demand for a total of 2.9 million square feet of non-medical office space with an additional demand for about 850,000 square feet of medical office space. A portion of this future demand is dependent on growth in other Fremont and surrounding City job sectors.

Table 36
Net Demand for Industrial Land in Core Industrial Areas
South Fremont/Warm Springs Area Study; EPS#20050

Item	Total
Industrial Land Demand	
Total Space Needs	
Building Space Demand in Core Industrial Areas	9,445,700 sq. ft.
Vacant Building Capacity	
Excess Vacant Space in Core Industrial (1)	3,100,000 sq. ft.
Net Space and Land Needs	
Net Space Needs	6,345,700 sq. ft.
Net Land Needs in Core Industrial Areas	**416 acres**

(1) Based on assumption of a 5% frictional vacancy rate and a 25% obsolescence rate among vacant space.

Sources: Economic & Planning Systems, Inc.

There is currently an existing tracked vacancy of about 350,000 square feet of space, most of which is not obsolete. This implies a net demand for an additional 3.4 million square feet of office space (non-medical and medical) over the next 25 years or about 135,000 square feet each year. Based on historical trends in the City and other locations, up to one-third of this space demand, about 1.1 million square feet, might be in new Class A buildings. The remainder would be accommodated in new and existing Class B and C buildings, including some underutilized industrial buildings.

Existing Office Locations

Various workspace clusters are scattered through the City. Irvington, Niles, and Mission San Jose business districts support primarily retail and smaller office spaces. The more retail-oriented business districts also include some low-rise office buildings with smaller spaces accommodating healthcare, financial services, and real estate personnel tenants. The City Center and Centerville also include retail development, though with larger office clusters. The City Center represents the largest office cluster with the majority of the Class A building space and strong concentrations of health services (anchored by Washington Hospital, Kaiser Permanente, and Fremont Healthcare Center) and professional and financial services, including real estate, credit intermediation, and architectural and engineering services.

Midtown

The City is in the process of developing a flexible form-based plan for the Midtown area of the City, within the City's City Center. The plan is focused on creating a mixed-use district that includes new residential, retail, entertainment, and office uses. The plan provides the opportunity for the development of up to 1.5 million square feet of additional office development. With more limited opportunities for new office development in the City Center, the combination of Midtown's proximity to the existing concentration of health services/medical office and professional and financial services and its planned character and amenities will make it the preferred location of new Class A office development as well as new medical office space.

Implications for Warm Springs Area

Outside of the demand for office/R&D flex spaces and other spaces with office integrated with industrial uses, there are a number of constraints to the capture of significant office development around the Warm Springs BART station in the short to medium term. These constraints include (1) the overall demand for office space in the City, (2) the existing industrial character of the area, and (3) the competitive advantages of Midtown in capturing new Class A space and medical office development as well as the likely dispersal among the City's numerous business districts of the office demand for smaller spaces seeking to be integrated into a specific mix of businesses or neighborhood and/or seeking smaller spaces at more modest rents. Over the longer term, as the Midtown builds out, the Warm Springs BART station could become the preferred location for new, higher density office development. In the short to medium term, a catalyst beyond the construction of the BART station would likely be required to initiate office development, such as the development of a public/quasi-public office complex.